Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in this application:

Listing of Claims:

1. (Original) A method for transferring data on power line communications ("PLC") signals over a PLC system, wherein the PLC system operates in accordance with a PLC signal frame structure including a payload portion and wherein the payload portion has a predetermined, fixed length and includes at least one payload symbol, the method comprising:

obtaining channel quality data for a PLC system signal path extending between a source PLC transceiver and a destination PLC transceiver;

computing, based on at least one of the channel quality data and node configuration data, a payload symbol length;

generating a payload portion including at least one payload symbol of the computed length, wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion equals the predetermined length of the payload portion; and

modifying processing operations at the source PLC transceiver for generating PLC carriers in accordance with the PLC signal frame structure including the at least one payload symbol having the computed payload length.

2. (Original) The method of claim 1 further comprising: modifying processing operations at the destination PLC transceiver for extracting data from the PLC signal frame structure based on the computed length payload symbol.

3. (Original) The method of claim 1, wherein the source PLC transceiver operates in a default mode for generating PLC carriers based on a PLC signal frame structure including payload symbols having a first length, wherein the computed payload symbol length exceeds the first length, thereby increasing PLC data throughput rate and efficiency of utilization of the PLC system as a channel for transferring communications data.

4. (Original) The method of claim 1, wherein the destination PLC transceiver operates in a default mode for extracting information content from a received PLC signal generated based on a PLC frame structure including payload symbols having a first length, wherein the computed payload symbol length exceeds the first length.

5. (Original) The method of claim 1 further comprising:

transmitting from the PLC source transceiver, over the PLC system and for receipt at the destination PLC transceiver, PLC carriers generated in accordance with the frame structure;

determining at the destination PLC transceiver, from the PLC carriers transmitted from the source PLC transceiver, whether the payload symbols used to generate the received PLC carriers have a length other than a default mode payload symbol length; and

at the destination PLC transceiver, extracting information content data from the received PLC carriers based on the payload length determination.

6. (Original) The method of claim 3 further comprising: generating a predetermined number of distinct PLC carriers based on the computed payload symbol length, wherein the predetermined number of PLC carriers exceeds an available number of distinct PLC carriers generated during operation of the source PLC transceiver in the default mode.

7. (Original) The method of claim 6, wherein the predetermined number of distinct PLC carriers have a narrower bandwidth than the bandwidth of the PLC carriers generated during operation of the source PLC transceiver in the default mode.

8. (Original) The method of claim 6, wherein the predetermined number of distinct frequency PLC carriers are distributed across a PLC frequency spectrum broader than a PLC frequency spectrum required by the default mode.

9. (Original) The method of claim 3 further comprising: increasing a sampling rate of a clock included in the source PLC transceiver to a rate exceeding a sampling rate associated with the default mode.

10. (Original) The method of claim 8, wherein the predetermined number of distinct PLC carriers has a narrower bandwidth than the bandwidth of the PLC carriers generated during operation of the source PLC transceiver in the default mode.

11. (Original) The method of claim 9, wherein the predetermined number of distinct PLC carriers has a narrower bandwidth than the bandwidth of the PLC carriers generated during operation of the source PLC transceiver in the default mode.

12. (Original) The method of claim 1, wherein the source PLC transceiver operates in a default mode for generating PLC carriers based on a PLC signal frame structure including payload symbols having a first length, wherein the computed payload symbol length is less than the first length.

13. (Original) The method of claim 1, wherein the PLC system includes power and communications data distribution components operating in accordance with at least one operating mode.

14. (Original) The method of claim 1, wherein the at least one operating mode includes PLC system operation in accordance with processing capabilities at a range of processing speeds.

15. (Original) The method of claim 1, wherein the PLC carriers have frequencies within a PLC frequency spectrum extending between about 2 MHz and about 30 MHz.

16. (Original) A power line communications ("PLC") transceiver for transferring, over a PLC system, PLC signals generated in accordance with a PLC signal frame structure including a payload portion, wherein the payload portion has a predetermined, fixed length and includes at least one payload symbol, the PLC transceiver comprising:

a channel estimator for obtaining channel quality data for a PLC system signal path extending to a destination PLC transceiver;

a symbol length controller coupled to the channel estimator and for computing, based on

at least one of the channel quality data and node configuration data stored in the symbol length controller, a payload symbol length, wherein the computed payload symbol length is used for generating a payload portion including at least one payload symbol of the computed length, wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion equals the predetermined length of the payload portion; and

a PLC carrier generator coupled to the symbol length controller for generating PLC carriers containing information content, wherein the symbol length controller supplies the PLC signal generator with control signals for modifying processing operations in accordance with a PLC signal frame including the at least one payload symbol having the computed symbol length.

17. (Original) The PLC transceiver of claim 16, wherein the PLC carrier generator normally operates in a default mode, wherein in the default mode a payload symbol has a predetermined length.

18. (Original) The PLC transceiver of claim 17, wherein the computed payload symbol length exceeds or is less than the predetermined payload symbol length for the default mode.

19. (Original) The PLC transceiver of claim 16, wherein the PLC carrier generator further comprises a reprogrammable forward error correction ("FEC") encoder and a reprogrammable FEC decoder capable of being programmed to perform PLC processing on data blocks containing information content data in accordance with a selected payload symbol length, wherein the data blocks are selected from at least one of a predetermined number of sizes.

20. (Original) The PLC transceiver of claim 16, wherein the PLC carrier generator further comprises a reprogrammable interleaver module and a reprogrammable deinterleaver module which are coupled respectively to the FEC encoder and FED decoder, wherein each of the interleaver and deinterleaver modules is capable of being programmed to perform PLC signal processing on data blocks containing information content data in accordance with a selected payload symbol length.

21. (Original) The PLC transceiver of claim 16 further comprising:

a computer processing unit ("CPU") coupled to the symbol length controller and the PLC carrier generator, wherein the CPU controls Phy layer software operations and performs channel quality assessment operations.

22. (New) A method for transferring data on power line communications ("PLC") signals over a PLC system, wherein the PLC system is capable of operating in accordance with both a first PLC signal frame structure and a second PLC signal frame structure, each of said first and second PLC signal frame structures including a payload portion having at least one payload symbol, the method comprising:

obtaining channel quality data for a PLC system signal path extending between a source PLC transceiver and a destination PLC transceiver;

computing, based on at least one of the channel quality data and node configuration data, a payload symbol length;

generating a payload portion including at least one payload symbol of the computed length, wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion conforms to the maximum allowable length of the payload portion of the first PLC signal frame structure and wherein said generating of the payload portion further comprises modifying processing operations at the source PLC transceiver for generating the payload portion in accordance with the second PLC signal frame structure including the at least one payload symbol having the computed payload symbol length.

23. (New) The method of claim 22 further comprising: modifying processing operations at the destination PLC transceiver for extracting data from the PLC signal frame structure based on the computed length payload symbol.

24. (New) The method of claim 22, wherein computing a payload symbol length comprises determining a length of a cyclic prefix of the payload symbol.

25. (New) The method of claim 22, wherein computing a payload symbol length comprises determining a length of a data portion of the payload symbol.

26. (New) The method of claim 22, wherein computing a payload symbol length comprises computing the payload symbol length based on the channel quality data.

27. (New) The method of claim 22, wherein computing a payload symbol length comprises computing the payload symbol length based on the node configuration data.

28. (New) The method of claim 22, wherein computing a payload symbol length comprises computing the payload symbol length based on the channel quality data and the node configuration data.

29. (New) The method of claim 22, wherein computing a payload symbol length comprises computing a payload symbol length that is greater than a payload symbol length according to the first PLC signal frame structure.

30. (New) The method of claim 22, wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion equals the maximum allowable length of the payload portion of the first PLC signal frame structure.

31. (New) The method of claim 22, further comprising transmitting over the PLC system signal path a signal identifying the computed payload symbol length.

32. (New) In a power line communications ("PLC") system that is capable of operating in accordance with both a first PLC signal frame structure and a second PLC signal frame structure, each of said first and second PLC signal frame structures including a payload portion having at least one payload symbol, a PLC transceiver operating in accordance with the second PLC signal frame structure comprising:

a channel estimator for obtaining channel quality data for a PLC system signal path extending between the PLC transceiver and another PLC transceiver; and

a symbol length controller coupled to the channel estimator and for computing, based on at least one of the channel quality data and node configuration data stored in the symbol length controller, a payload symbol length, wherein the computed payload symbol length is used for generating a payload portion including at least one payload symbol of the computed length,

wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion conforms to the maximum allowable length of the payload portion of the first PLC frame structure, and wherein the generating further comprises modifying processing operations in accordance with the second PLC signal frame structure including the at least one payload symbol having the computed payload symbol length.

33. (New) The PLC transceiver of claim 32, wherein the payload symbol length comprises a cyclic prefix length.

34. (New) The PLC transceiver of claim 32, wherein the payload symbol length comprises a data portion length.

35. (New) The PLC transceiver of claim 32, wherein the symbol length controller computes the payload symbol length based on the channel quality data.

36. (New) The PLC transceiver of claim 32, wherein the symbol length controller computes the payload symbol length based on the node configuration data.

37. (New) The PLC transceiver of claim 32, wherein the symbol length controller computes the payload symbol length based on the channel quality data and the node configuration data.

38. (New) The PLC transceiver of claim 32, wherein the payload symbol length is greater than a payload symbol length according to the first PLC signal frame structure.

39. (New) The PLC transceiver of claim 32, wherein the length or sum of the lengths of the at least one payload symbol contained in the generated payload portion equals the maximum allowable length of the payload portion of the first PLC signal frame structure.

40. (New) The PLC transceiver of claim 32, further cofigured to transmit over the PLC system signal path a signal identifying the computed payload symbol length.